AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for matching transmission resources ~~(rpon)~~ between a central communications device and a number of decentralized communications devices ~~(OLT, ONU1...3),~~ comprising:

using ~~in which~~ the central communications device ~~(OLT) allocates~~ to allocate a transmission resource element ~~(tpr1...3)~~ to each decentralized communications device ~~(ONU1...3)~~ as a function of the quality and/or transmission characteristics of at least one connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ which is routed via the respective transmission resource element (tpr1...3), wherein

~~characterized~~

~~in that~~ the transmission resource elements ~~(tpr1...3)~~ which are allocated to the decentralized communications devices ~~(ONU1...3)~~ are at least partially reduced,

~~in that~~ the quality and/or the transmission characteristics of the at least one connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ which is routed via the respective reduced transmission resource element ~~(tpr1...3)~~ is determined, and

~~in that~~ the extent of each reduced transmission resource element ~~(tpr1...3)~~ which is allocated to a decentralized communications device ~~(ONU1...3)~~ is modified or retained as a function of the quality.

2. (Currently Amended) The method as claimed in claim 1, wherein

~~characterized~~

~~in that~~ the transmission resources ~~(rpon)~~ which become free when the allocated transmission resource elements ~~(tpr1...3)~~ are at least partially reduced are provided at least temporarily to other decentralized communications devices ~~(ONU1...3)~~.

3. (Currently Amended) The method as claimed in claim 1 ~~or 2~~, wherein ~~characterized~~

~~in that,~~ if it is found that the guaranteed quality and/or the transmission characteristics of at least one of the connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ which is routed via the reduced resource element ~~(tpr1…3)~~ allocated to a decentralized communications device ~~(ONU1…3)~~ is not satisfactory, the extent of the allocated, reduced, transmission resource element ~~(tpr1…3)~~ is increased.

4. (Currently Amended) The method as claimed in claim 1 ~~one of the preceding claims~~, wherein ~~characterized~~

~~in that~~ the at least one connection ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ which is routed via the respective allocated transmission resource element ~~(tpr1…3)~~ is implemented using Asynchronous Transfer Mode ATM, with the ATM connection ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ being configured in accordance with a standardized ATM service class, which in each case specifies the quality and the transmission characteristics of the ATM connection,

~~in that~~ the information to be transmitted using an ATM connection ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ is stored in at least one queue ~~(WS1…n)~~ in each decentralized communications device ~~(ONU1…3)~~

~~in that~~ the current queue filling level ~~(fsl…n)~~ of the at least one queue ~~(WS1…n)~~ is recorded and

~~in that,~~ by assessing the recording result, the quality and the transmission characteristics of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ are determined, and the allocated transmission resource element ~~(tpr1…3)~~ is modified as a function of the quality and of the transmission characteristics.

5. (Currently Amended) The method as claimed in claim 4, wherein ~~characterized~~

~~in that~~ the ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ are each configured in accordance with the ATM service classes

- Constant Bit Rate ~~(CBR)~~, or

- Variable Bit Rate – real time ~~(VBRrt)~~, or

- Variable Bit Rate – non real time ~~(VBRnrt)~~, or

- Guaranteed Frame Rate ~~(GFR)~~ or

- Unspecified Bit Rate ~~(UBR)~~ or

- in accordance with a further ATM service class defined by the ATM forum,

in which case the ATM service classes can be allocated to the Quality of Service classes – Class 1, Class 2, Class 3, U Class – as defined in the ITU-T Specification I.356.

6. (Currently Amended) The method as claimed in claim 4 ~~or 5~~, wherein ~~characterized~~

~~in that,~~ if there are a number of ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ which are routed via a decentralized communications device ~~(ONU1…3)~~, the queue filling levels ~~(fs1…n)~~ of the queues ~~(WS1…n)~~ are recorded and assessed as a function of the ATM service class of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~.

7. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 6~~, wherein ~~characterized~~

~~in that~~ the recording results are transmitted to the central communications device ~~(OLT)~~, and

~~in that, in~~ the central communications device ~~(OLT)~~ the transmitted recording results are used to assess the quality and the transmission characteristics of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~, and the transmission resource elements ~~(tpr1…3)~~ which are allocated to the decentralized communications devices ~~(ONU1…3)~~ are modified as a function of the quality and the transmission characteristics.

8. (Currently Amended) The method as claimed in claim 6~~claims 6 and 7~~,wherein ~~characterized~~

~~in that~~ an ATM service class-specific sum of the queue filling levels of the corresponding queues ~~(WS1…n)~~ is formed for each ATM service class, with the ATM service class specific queue total filling level information ~~(ifs_CBR, ifs_VBRrt, ifs_VBRnrt, ifs_GFR, ifs_UBR)~~ which is formed being weighted as a function of the ATM service classes,

~~in that~~ the quality and the transmission characteristics of the ATM connections ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ of an ATM service class are determined by assessing the weighted ATM service class specific queue total filling level information ~~(ifs_CBR, ifs_VBRrt,ifs_VBRnrt, ifs_GFR, ifs_UBR)~~, on an ATM service class specific basis in each case, and the transmission resource element ~~(tpr1…3)~~ which is allocated to the decentralized communications device ~~(ONU1…3)~~ is modified as a function of the quality and the transmission characteristics.

9. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 8~~, wherein ~~characterized~~

~~in that~~ the queue filling level information ~~(fs1…n)~~ from ATM connections ~~(vCBR1…3)~~ which are allocated to the stringent class – Class 1 – in accordance with ITU-T I356 are ignored, and

~~in that~~ the transmission resource ~~(tpr1...3)~~ which is allocated to a decentralized communications device ~~(ONU1...3)~~ comprises at least the sum of the guaranteed minimum transmission capacity of all the ATM connections ~~(vCBR1...3)~~ which are routed via the allocated transmission resource ~~(tpr1...3)~~ in the stringent class in accordance with ITU-T I.356.

10. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 9~~, wherein~~characterized~~

~~in that~~ the transmission resource element ~~in that~~ which is allocated to a decentralized communications device ~~in that~~ is reduced in such a manner that the sum of the guaranteed minimum transmission capacity is undershot for the at least one ATM connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ of an ATM service class.

11. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 10~~, wherein~~characterized~~

in that, for each decentralized communications device ~~(ONU1...3)~~,

- a first upper ATM service class specific queue total filling level limit (x_{HIGH}) is defined for each ATM service class specific queue filling level information item ~~(ifs_CBR, ifs_VBRrt, ifs_VBRnrt, ifs_GFR, ifsUBR)~~,

- if it is found that one of the defined first upper queue total filling level limit values (x_{HIGH}) has been exceeded, the transmission resource element ~~(tpr1...3)~~ which is allocated to the decentralized communications device ~~(ONU1...3)~~ is increased in such a manner that it covers at least

-- the sum of the peak cell rate of all the Constant Bit Rate~~CBR~~ and/or Variable Bit Rate - real time~~VBRrt~~ connections, and/or

-- the sum of the sustainable cell rate of all the Variable Bit Rate - real time~~VBRrt~~ connections, and/or

-- the sum of the minimum cell rate of all the Guaranteed Frame Rate~~GFR~~ connections.

12. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 11~~, wherein~~characterized~~

~~in that~~ the queues ~~(~~WS1...3~~)~~ which are arranged in a decentralized communications device ~~(~~ONU1...3~~)~~ are read as a function of the ATM service classes of the ATM connections ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~, and as a function of the allocated transmission resource element ~~(~~tpr1...3~~)~~.

13. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 12~~, wherein~~characterized~~

~~in that~~, when an allocated transmission resource element ~~(~~tpr1...3~~)~~ is reduced, in a decentralized communications device ~~(~~ONU1...3~~)~~ the individual queues ~~(~~WS1...n~~)~~ below the respectively guaranteed minimum transmission capacity of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ are read.

14. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 13~~, wherein~~characterized~~

~~in that~~ the queues ~~(~~WS1...n~~)~~ which are arranged in a decentralized communications device ~~(~~ONU1...3~~)~~ are read using the weighted fair queuing algorithm (WFQ), with

[[-]]the queues ~~(~~WS1...n~~)~~ each being allocated a weighting factor as a function of the ATM service classes of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~, and

[[-]]the queues ~~(~~WS1...n~~)~~ being read as a function of the allocated weighting factors.

15. (Currently Amended) The method as claimed in claim 14, wherein~~characterized~~

~~in that~~ the reading process based on the weighted fair queuing algorithm ~~(WFQ)~~ has a further reading process based on the absolute delay priority algorithm ~~(ADP)~~, which is designed in accordance with the absolute delay priority algorithm, superimposed on it, by means of which the queues ~~(WS1)~~ for ATM connections in the stringent class are read with priority.

16. (Currently Amended) The method as claimed in claim 4~~one of claims 4 to 15~~, wherein~~characterized~~

~~in that, in~~ each decentralized communications device ~~(ONU1...3)~~,

- a second upper queue-specific queue filling level limit value (y_{HIGH}) is defined for each queue ~~(WS1...n)~~, and

- if it is found that one of the defined second upper queue filling level limit values (y_{HIGH}) has been exceeded, the weighting factors which are allocated to the queues ~~(WS1...n)~~ of the corresponding ATM connections ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ are recalculated.

17. (Currently Amended) The method as claimed in one of the preceding claims, wherein~~characterized~~

- in that the transmission resources ~~(rpon)~~ are provided by a passive optical communications network ~~(PON)~~, with the central communications device ~~(OLT)~~ being in the form of an optical network monitoring unit and the decentralized communications devices ~~(ONU1...3)~~ being in the form of optical network termination units,

~~- in that~~ the transmission resource elements ~~(tpr1...3)~~ which are allocated to the decentralized communications devices ~~(ONU1...3)~~ are time-division-multiplex-oriented, and

~~in that~~ the access from the passive optical communications network ~~(PON)~~ to the decentralized communications devices ~~(ONU1…3)~~ is allocated using a TDMA access method.

18. (Currently Amended) The method as claimed in claim 1 ~~one of claims 1 to 16~~, wherein ~~characterized~~

in that the transmission resources (rpon) are provided within an SDH or SONET ring.

19. (Currently Amended) A communications arrangement ~~(ACCESS)~~ having a central and a number of decentralized communications devices ~~(OLT, ONU1…3)~~, and having a transmission medium ~~(PON)~~ which is arranged between the central and the decentralized communications devices ~~(OLT, ONU1…3)~~ and has transmission resources ~~(rpon)~~. comprising:

~~having~~ a control unit ~~(MAC)~~, which is arranged in the central communications device ~~(OLT)~~, for allocation of transmission resource elements ~~(tpr1…3)~~ to the decentralized communications devices ~~(ONU1…3)~~, in each case as a function of the quality and/or the transmission characteristics of at least one connection ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~, which is routed via the respective transmission resource element ~~(tpr1…3)~~, wherein ~~characterized~~

~~in that~~ the control unit ~~(MAC)~~ is designed such that the transmission resource elements ~~(tpr1…3)~~ which are allocated to the decentralized communications devices ~~(ONU1…3)~~ are at least partially reduced,

~~in that~~ the decentralized communications devices (ONU1…3) have

-- a recorder ~~recording means~~ for recording the quality and/or the transmission characteristics of the at least one connection ~~(vCBR, vVBRrt, vVBRnrt1…x, vGFR1…y, vUBR)~~ which is routed via the reduced transmission resource element ~~(tpr1…3)~~, and

-- a transmitter~~means~~ for transmitting the recording result to the central communications device ~~(OLT)~~, and

~~-- in that~~ the control unit ~~(MAC)~~ can modify~~has modification means using which~~ the extent of the reduced transmission resource element ~~(tpr1...3)~~ which is allocated to each decentralized communications device ~~(ONU1...3)~~ is modified or retained as a function of the recording result.

20. (Currently Amended) The communications arrangement as claimed in claim 19, wherein~~characterized~~

in that the modification means are designed such that, if it is found that the quality and/or the transmission characteristics of at least one of the connections ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ which is routed via the reduced resource element ~~(tpr1...3)~~ which is allocated to a decentralized communications device ~~(ONU1...3)~~ is not sufficient, the extent of the respectively allocated, reduced transmission resource element ~~(tpr1...3)~~ is increased.

21. (Currently Amended) The communications arrangement as claimed in claim 20, wherein~~characterized~~

~~-- in that~~ the at least one connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ which is routed via the allocated transmission resource element ~~(tpr1...3)~~ is implemented using Asynchronous Transfer Mode ATM, with the ATM connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~ being configured in accordance with an ATM service class defined by the ATM forum, which in each case specifies the quality and the transmission characteristics of the ATM connection,

~~-- in that~~ at least one queue ~~(WS1...n)~~ is provided in each decentralized communications device ~~(ONU1...3)~~ for temporary storage of the information to be transmitted in the at least one ATM connection ~~(vCBR, vVBRrt, vVBRnrt1...x, vGFR1...y, vUBR)~~,

~~– in that~~ each decentralized communications device ~~(ONU1...3)~~ has a recorder~~filling level recording means~~ for recording the current queue filling level ~~(fs1...n)~~ of the at least one queue ~~(WS1...n)~~ and for transmitting the recording result to the control unit ~~(MAC)~~ which is arranged in the central communications device ~~(OLT)~~, and

~~– in that~~ the control unit ~~(MAC)~~ is designed such that the quality and the transmission charasteristics of the respective ATM connections ~~(vCBR, vVBRrt, vVBRnrt1...x), vGFR1...y, vUBR)~~ are determined by assessing the transmitted recording results, and the transmission results, and the transmission resource elements ~~(tpr1...3)~~ which are allocated to the decentralized communications devices ~~(ONU1...3)~~ are modified as a function of the quality and the transmission characteristics.